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Delivering public transport infrastructure with land development to enable transit-oriented urbanism.

The State Government through Metronet has announced a new approach to developing Karnup Station in the City of Rockingham section of the Southern Railway. The approach is based on how to better use government land adjacent to the proposed station. The goal is to create a new approach that involves the private sector from the beginning not at the end after stations are completed. It is called 'the Karnup Station Precinct Problem and Opportunity Statement' under the Market-Led Proposals framework. I think this is a really important step in providing the next phase of public transport infrastructure in Perth. A longer version of the paper, with a bigger Australian context in Fifth Estate, is provided here.

According to the Minister Rita Saffioti, the statement and request for tenders 'has been released, seeking feedback from the private market interested in constructing a new passenger train station, and transit-oriented community and precinct in one of the State's highest growing suburbs'. The approach is called by the Minister a 'Problem-Opportunity approach' as they do seem to have a problem getting land development around stations once called 'Metro Hubs', and now they see this involvement of the private sector as an opportunity to save money as well.

I want to suggest that it is a much bigger opportunity - to create a better city. Nobody will question that it is better to enable closer integration of land development and public transport, something that has only rarely been achieved in the rapid delivery of new rail lines across Perth. However, we need to extend the model into much more than the odd Metronet station. As the Minister suggests Karnup will be 'the *first of many* Problem and Opportunity Statements that aim to leverage Government land holdings and deliver public infrastructure at minimal cost to the ratepayer.' I want to suggest how this needs to be the basis of a complete overhaul of how we plan and build our city.

Why is it necessary to integrate land development into rail?

The first point to make is that the history of rail and tram development shows that the integration of transit-oriented urbanism was entirely based on the involvement of the private sector. These modes were funded by private finance as real-estate projects from the late 19th century through to the 1940's. The much-loved station precincts and tram-based streets like Beaufort Street, South Terrace, Oxford Street and Rokeby Road, were all based on developments that embraced private sector entrepreneurs and partnered with government to ensure common good outcomes. The Great Southern Railway set up the wheat belt towns and agricultural land.

The partnership system worked well in cities across the world until the pressure from car and bus lobbies post war forced the public sector to take over rail and tram systems when they began to fail as profitable ventures. From then, until the last few decades, our trams, trains and buses became more and more welfare-oriented in their markets.

At the same time, funding of transport around the world in the post war era became more and more of a top-down process, even Stalinist in its features, as the modernist city was deemed to need massive freeways now the era of rail and trams was over. The history of rail closures and tram removals was fully underway and indeed hit its high point in Perth with the closure of the Fremantle rail line in 1979 as the start of removing all rail lines; the State's intervention was because 'Perth was a car and bus city that would never need rail'.

However, the reaction from the public was huge and a rebuilding of rail began in Perth and has continued ever since with patronage increasing ten times. The same process was evident in cities around the world for the past 30 years and has increasingly involved private sector developers in the land on and around stations, even in China.

The 'second rail revolution' began globally after the digital economy-based services jobs all found that they worked best in the walking- and transit-oriented fabrics of the old cities. These places are where people meet and plan projects together and where the new economy was emerging in both interactive and easily accessible work and living areas. Cities therefore began to rejuvenate and extend old railways and to rediscover the value of trams and light rail. The revival of Perth's rail system since the 1990's is one of the best examples but was a global phenomenon as cities saw how much their cities needed to reduce their car dependence and create more walkable urban areas.

In two recent studies the economic value in newly rejuvenated places with good walkability has been explained. Smart Growth America examined the 35 largest cities in the US and discovered that only 1.5% of the spatial area of these cities was possible to describe as 'walkable' and yet these places gave rise to 20% of America's GDP. Another study of 27 global studies as part of Kate Meyerich's PhD at Curtin has shown that the most critical factors creating 'great cities' were whether they had a good rail system and whether they had place-activated centres around those rail lines; this study used some 20 economic, social and environmental parameters.

Perth has done the rail part of this equation though mostly it has not done the urban fabric so necessary for this economic benefit. The Karnup Problem and Opportunity Statement is meant to help with that. There are 'many other' opportunities along the rail system that need this kind of transit-urbanism and it will need to be supported by public and private creativity and innovation as each one will be different and will need to work closely with local communities. But train stations can't be the only places to make walkable.

The Next Step: extend the model into mid-tier transit procurement and governance

There is another exercise that is being reviewed by MetroNet and that is the role of mid-tier transit in providing 'the next major opportunity in public transport' as the Minister said at a recent event. MetroNet and the PTA are looking at how the city can create better networks using mid-tier transit that go along main roads and enable connections to MetroNet stations across the major Perth corridors. Mid-tier transit provides not just a better public transport service (higher speeds and capacities) with greater integration to trains but becomes the basis for much greater urban regeneration that can produce transit-oriented communities. Surely if we are reviewing Mid-Tier Transit we should involve the planning and urban regeneration agencies as well?

The Mid-Tier Transit Review now needs to consider the Problem-Opportunity model as a way of helping to fund the integrated transit and land use package. It can also be part of creating

net zero cities which is being addressed by the State Climate Strategy. This partnership model can help show a way forward that is not just new technology in a development but how well-located, affordable housing and net zero outcomes can be integrated.

For the past decade the Sustainable Built Environment National Research Centre has been examining, across all Australian cities, how to rejuvenate urban development along main roads using mid-tier transit. It began by looking at Light Rail and for example proposed the Knowledge Arc Light Rail. However, local governments were wary about the disruption caused by constructing light rail and were a major part in why the MAX Light Rail was not pursued after its detailed studies and business plan were completed. Then the SBE research group discovered the Trackless Tram which promised all that Light Rail provided but without the disruption and at significantly reduced cost as it did not need an electric overhead catenary or steel tracks. It appeared to be a smart transport solution that had huge transit-led urbanism opportunities.

There was an immediate positive response. Local governments embraced the concept in Queensland (Townsville, City of Sunshine Coast), NSW (City of Inner West and City of Liverpool), Victoria (City of Wyndham) and in WA (15 local governments in Perth led by City of Stirling, and also the City of Bunbury). They began looking at where preferred routes could enable urban regeneration and provide the connection that enabled walkability and other local urban regeneration outcomes so central to local governments.

SNAMUTS modelling was used in most of these projects to enable perspective on the whole public transport network. The results showed powerfully why such mid-tier service improvements can enable not just better public transport networks but also better opportunities for land development due to land value improvements that could be captured.

Mid-tier urban regeneration has also been developed into a model for how to create net zero cities and thus provide even more opportunities for a cross government set of objectives being fulfilled. Further research on the net zero corridor concept and how it can be delivered is now part of a large national project through CRC RACE.

Mid-tier transit is now being encouraged across Australia and globally, by all levels of government, most major professional bodies in urban development, and indeed much of civil society. However, it cant be delivered by top-down approaches using transit delivery to 'build it and then TOD's will come'. Land development needs to be integrated into mid-tier transit corridors and their station precincts from the start. In our research, when station precinct urbanism is done *after* the rail or mid-tier transit line is designed and built, then we lose the potential to create urban land value. The private sector knows best how to capture land value and the public sector knows best how to create common good outcomes. Together, the partnerships can create great cities but it needs to be created before the final designs and procurement of the infrastructure.

The Problem-Opportunity model shows us the way out: the private sector needs to be included in procurement before stations and rail lines are built as is now happening on Karnup Station. This helps provide the capital but also the expertise on how to make a walkable, attractive, productive place that can be easily activated. It can also enable regeneration of the surrounding precinct and wider urban area. It should now be possible to apply this approach to mid-tier transit as well as to MetroNet rail stations.

Karnup has a large parcel of government land, but the partnership approach can also be done on any mid-tier corridor where there are government land sites and indeed the main road is already government land and often has significant setbacks. Local governments and private sector land-owners, are already beginning to consider how such land development opportunities could drive the value of a mid-tier transit option. I suggest this approach could become the driver of the whole planning system. Indeed, such a Problem-Opportunity model is more likely to be successful along mid-tier transit corridors than in Karnup where the land value is much lower due to its location.

Conclusion

There needs to be an integration of planning agencies (DPLH and DevelopmentWA) with MetroNet and PTA on the Mid-Tier Transit Review, so that the review does not just consider vehicle technologies, but that it pursues the concept of the recently announced Problem-Opportunity Approach. A new model for partnership is needed for the design, funding, procurement and delivery of public transport and transit-oriented urbanism. Planning cannot be side-lined in such a critical policy review.

The opportunity to save money, save land on the urban fringes, save greenhouse gases, and save travel time, can all be integrated.

About the author

***Peter Newman** **AO FPIA** is the Professor of Sustainability at Curtin University. He has written 23 books and over 400 papers on sustainable cities and decarbonization policy. He created the term 'automobile dependence' in the 1980's which is now standard terminology in urban planning and his 1989 book with Jeff Kenworthy has been called 'one of the most influential planning books of all time'. He has taught planning in three US universities. Peter has worked to deliver his ideas in Perth at all levels of government, advising past premiers and through his memberships of various boards and committees including Infrastructure Australia. He is presently the Co-ordinating Lead Author for the IPCC on Transport. Peter was awarded an Order of Australia for his contributions to urban design and sustainable transport and was named the Western Australian Scientist of the Year in 2018/19. Peter has been a PIA Fellow since 2006.*